



UNIVERSITY OF ESWATINI
Faculty of Health Sciences
Department of Environmental Health Science

DEGREE IN ENVIRONMENTAL HEALTH AND FOOD
SCIENCE

FINAL EXAMINATION PAPER 2018

TITLE OF PAPER : FERMENTED FOODS
COURSE CODE : EHS 423
DURATION : 2 HOURS
MARKS : 100

INSTRUCTIONS :

- : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
- : ANSWER **ANY FOUR** QUESTIONS.
- : EACH QUESTION **CARRIES 25** MARKS.
- : WRITE NEATLY & CLEARLY
- :
- : BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED
BY THE INVIGILATOR.**

QUESTION ONE

- (a) Define fermentation. **[1 Mark]**
 - (b) Briefly discuss main important phyla of bacteria used in the manufacture of fermented foods **[9 Marks]**
 - (c) Briefly discuss *Lactobacillus* species that are relevant to traditionally fermented Swazi foods. **[15 Marks]**
- Total [25 Marks]**

QUESTION TWO

- (a) What are the desirable properties of starter cultures in meat, dairy, bread, wine and beer? **[13 Marks]**
 - (b) What is vinegar and what are the main uses of vinegar in food industry? **[6 Marks]**
 - (c) Discuss how the use of starter culture ensures that products are manufactured on a timely and predictable schedule, with consistent and repeatable product qualities. **[6 Marks]**
- Total [25 Marks]**

QUESTION THREE

- (a) How would you differentiate substrate level phosphorylation from oxidative phosphorylation **[5 Marks]**
 - (b) With aid of flow diagram briefly discuss glycolytic/Embden-Meyerhoff pathways **[10 marks]**
 - (c) What is the general representative microflora of vegetables before start of fermentation? **[10 Marks]**
- Total [25 Marks]**

QUESTION FOUR

- (a) Briefly discuss the properties of any six bacteria used in meat fermentation. **[15 Marks]**
 - (b) How would you differentiate hanging fermentation from sluggish fermentation? **[10 Marks]**
- Total [25 marks]**

QUESTION FIVE

- (a) Discuss the primary phase in beer fermentation and how it impacts on quality of beer. **20 Marks]**
 - (b) What role do bacteria play in wine fermentation? **[5 Marks]**
- Total [25 Marks]**